

Serial No. 09/993,520
Amendment dated July 5, 2006
Reply to Office Action of February 9, 2006

Docket No. K-0324

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-28. (Canceled).

29. (Currently Amended) A communication device having a plurality of protocol layers including a radio link control (RLC) layer and medium access control (MAC) layer, the RLC layer comprising:

~~a radio link control (RLC) transparent mode entity, wherein the RLC transparent mode entity includes~~

a transmission buffer storing at least one service data unit of the RLC layer (RLC SDU) transferred from an upper layer; and

a segmentation module segmenting the at least one ~~service data unit~~ RLC SDU received from the transmission buffer into at least one protocol data unit of the RLC layer (RLC PDU) according to size information transferred from ~~a lower layer~~ the MAC layer to the RLC layer, wherein the MAC layer is a lower layer of the RLC layer.

30. (Currently Amended) The communication device of claim 29, wherein ~~the radio link control (RLC)~~ a RLC transparent mode entity of the RLC layer transfers to the ~~lower~~ MAC

layer at least one ~~protocol data unit~~ MAC PDU amounting to a number requested by the lower MAC layer.

31. (Canceled)

32. (Currently Amended) The communication device of claim 30, wherein the ~~radio link control (RLC)~~ RLC transparent mode entity receives the size and number information through a MAC-STATUS-Ind primitive from the ~~medium access control (MAC)~~ MAC layer.

33. (Currently Amended) The communication device of claim 30, wherein the at least one ~~protocol data unit~~ RLC PDU is transferred to the lower MAC layer through a logical channel.

34. (Previously Presented) The communication device of claim 33, wherein the logical channel is any one of a dedicated control channel (DCCH), a dedicated traffic channel (DTCH), a common control channel (CCCH), a shared common control channel (SHCCH), a broadcast control channel (BCCH), and a paging control channel (PCCH).

Claims 35 and 36. (Canceled)

37. (Currently Amended) The communication device of claim 29, wherein the transmission buffer receives the at least one ~~service data unit~~ RLC SDU through a transparent mode service access point.

38. (Currently Amended) The communication device of claim 33, wherein the at least one ~~protocol data unit~~ RLC PDU is sent to a peer entity of a receiver side.

39. (Currently Amended) The communication device of claim 29, wherein the at least one ~~service data~~ RLC SDU is segmented by the segmentation module depending upon when a service is established.

40. (Currently Amended) The communication device of claim 29, wherein an allowable size for the at least one ~~protocol data unit~~ RLC PDU is decided based on transmit formats of a transport channel.

41. (Currently Amended) The communication device of claim 29, wherein the at least one ~~protocol data unit~~ RLC PDU provided by the segmentation module comprises one complete ~~service data unit~~ RLC SDU or segments of one complete ~~service data unit~~ RLC SDU.

42. (Currently Amended) The communication device of claim 29, further comprising:
a receiver buffer storing at least one ~~protocol data unit~~ RLC PDU received from the ~~lower~~ MAC layer; and

a reassembly module reassembling the at least one ~~protocol data unit~~ RLC PDU received from the receiver buffer into at least one ~~service data unit~~ RLC SDU.

Claims 43-51. (Canceled).

52. (Currently Amended) A data processing method in a wireless communication device having a plurality of protocol layers including a radio link control (RLC) layer of transparent mode and a medium access control (MAC) layer, the method, comprising:

storing at least one service data unit of the RLC layer (RLC SDU) transferred from an upper layer in a transmission buffer;

segmenting the at least one ~~service data unit~~ RLC SDU received from the transmission buffer into at least one protocol data unit of the RLC layer (RLC PDU) according to size information transferred from ~~a lower the MAC layer to the RLC layer, wherein the MAC layer is a lower layer of the RLC layer;~~ and

providing the at least one ~~protocol data unit~~ RLC PDU to the ~~lower~~ MAC layer.

53. (Currently Amended) The method of claim 52, wherein the ~~radio link control (RLC)~~ RLC layer provides to the ~~lower MAC layer~~ protocol data units RLC PDUs amounting to a number requested by the ~~lower~~ MAC layer.

54. (Canceled)

55. (Currently Amended) The method of claim 54, wherein the ~~radio link control (RLC)~~ RLC layer receives the size and number information through a MAC-STATUS-Ind primitive from the ~~medium access control (MAC)~~ MAC layer.

56. (Currently Amended) The method of claim 52, wherein the at least one ~~protocol data unit~~ RLC PDU is provided to the ~~lower~~ MAC layer through a logical channel.

57. (Previously Presented) The method of claim 56, wherein the logical channel is any one of a dedicated control channel (DCCH), a dedicated traffic channel (DTCH), a common control channel (CCCH), a shared common control channel (SHCCH), a broadcast control channel (BCCH), and a paging control channel (PCCH).

Claims 58 -59 (Canceled).

60. (Currently Amended) The method of claim 52, wherein the transmission buffer receives the at least one ~~service data unit~~ RLC SDU through a transparent mode service access point.

61. (Currently Amended) The method of claim 52, wherein the at least one ~~service data unit~~ RLC SDU of the transmission buffer is segmented by a segmentation module to provide the at least one ~~protocol data unit~~ RLC PDU depending upon when a service is established.

62. (Currently Amended) The method of claim 52, wherein an allowable size for the at least one ~~protocol data unit~~ RLC PDU is decided based on transmit formats of a transport channel.

63. (Currently Amended) The method of claim 52, wherein the at least one ~~protocol data unit~~ RLC PDU provided by the segmentation module comprises one complete ~~service data unit~~ RLC SDU or segments of one complete ~~service data unit~~ RLC SDU.

Claims 64-74. (Canceled).

75. (Currently Amended) The method of claim 52, wherein the at least ~~one protocol data~~ RLC PDU unit is transferred to the ~~lower~~ MAC layer in each transmission time interval (TTI).

76. (Currently Amended) The method of claim 75, wherein all ~~protocol data units~~ RLC PDUs segmented from a ~~service data unit~~ RLC SDU are transferred to the ~~lower~~ MAC layer in a transmission time interval (TTI).

77. (Currently Amended) The communication device of claim 30, wherein the ~~radio link control (RLC)~~ RLC transparent mode entity transfers the at least one ~~protocol data unit~~ RLC PDU to the ~~lower~~ MAC layer in each transmission time interval (TTI).

78. (Currently Amended) The communication device of claim 77, wherein all ~~protocol data units~~ RLC PDUs segmented from a ~~service data unit~~ RLC SDU are transferred to the ~~lower~~ MAC layer in a transmission time interval (TTI).